

Amendments to the Claims: This listing of claims will replace all prior versions, and listings, of claims in the application

Listing of Claims:

1. (Original) A positioning apparatus for positioning a test head for testing electronic components, said positioning apparatus comprising:

an outer cylinder;

a support coupled to said outer cylinder for supporting the test head;

a piston arranged within said outer cylinder, said piston and said outer cylinder defining a fluid compartment within said outer cylinder;

a pressure regulator for maintaining a pressure within said fluid compartment such that the test head may be suspended in a substantially weightless position, said position being adjustable in a vertical direction;

a lifting device for raising and lowering said outer cylinder, said lifting device including a drive mechanism coupled to the piston; and

a drive apparatus for operating said drive mechanism to move the test head to a predetermined position.

2. (Original) The positioning apparatus of claim 1 wherein said drive mechanism is a threaded drive mechanism.

3. (Original) The positioning apparatus of claim 2 wherein said drive mechanism is a lead screw mechanism.

4. (Original) The positioning apparatus of claim 1 wherein said fluid compartment is positioned above said drive mechanism such that when said drive mechanism drives said fluid compartment in a vertical direction, the test head is also driven in the vertical direction.

5. (Original) The positioning apparatus of claim 1 additionally comprising:

a position sensor for detecting a vertical position of the test head.

6. (Original) A positioning apparatus for positioning a test head for testing electronic components, said positioning apparatus comprising:

a drive mechanism for moving the test head in a vertical direction; and

a pneumatic compliant coupling mechanism coupled to said drive mechanism, said pneumatic compliant coupling mechanism supporting the test head in a substantially weightless condition and providing a range of motion to the test head in the vertical direction, said pneumatic compliant coupling mechanism being positioned above and secured to said drive mechanism such that said drive mechanism moves said pneumatic compliant coupling mechanism when moving the test head in the vertical direction.

7. (Original) The positioning apparatus of claim 6 wherein said drive mechanism is threaded.

8. (Original) The positioning apparatus of claim 6 wherein said pneumatic compliant coupling mechanism includes a fluid compartment and a pressure regulator for maintaining a pressure within said fluid compartment such that the test head may be suspended in the substantially weightless condition.

9. (Original) A method of positioning a test head for testing electronic components, said method comprising the steps of:

- (a) providing flow of a fluid into a fluid compartment coupled to the test head;
- (b) mechanically moving the test head to a desired position in a vertical direction using a drive mechanism after step (a); and
- (c) fluidly suspending the test head in a substantially weightless condition by maintaining a fluid pressure in the fluid compartment positioned between the test head and the drive mechanism.

10. (Original) The method of claim 9 further comprising a step of:
expanding and contracting the fluid compartment using a piston secured to the drive mechanism.

11. (Original) The method of claim 9 further comprising a step of:
applying an external force to adjust the desired position of the test head.

12. (Original) The method of claim 9 further comprising a step of:
providing air flow into the fluid compartment such that the substantially weightless condition of the test head is maintained.

13. (Original) The method of claim 9 further comprising a step of:

providing air flow out of the fluid compartment such that the substantially weightless condition of the test head is maintained.

14. (Original) A positioning apparatus for a test head of an electronic testing system for testing electronic components, said positioning apparatus comprising:

an inner cylinder;

an outer cylinder which is placed over the inner cylinder such that it can slide in a longitudinal direction;

a carrier-arm device that carries the test head and is attached to the outer cylinder;

a lifting device for raising and lowering the outer cylinder;

a fluid-holding compartment that is provided inside the outer cylinder; and

a pressure generation device that is connected via a fluid line to the fluid-holding compartment and is designed to generate a fluid pressure force directed counter to the weight of the test head and the support arm device, wherein

the lifting device includes a piston arranged inside the outer cylinder, the outer cylinder can slide in relation to the piston and the pressure in the fluid-holding compartment can be regulated via a pressure regulation device in such a manner that the outer cylinder, together with the support arm device and the test head, can be brought into a suspended position that is height-adjustable in relation to the piston.

15. (Original) The positioning apparatus as recited in claim 14, wherein the lifting device comprises a lifting rod that is adjustable in height by means of a threaded drive mechanism and carries the piston at a top end of the lifting rod.

16. (Currently Amended) The positioning apparatus as recited in ~~either of claim 14 or 15~~, wherein the lifting device comprises a hollow lifting rod that can be adjusted in height via a threaded drive mechanism, the threaded drive mechanism having a threaded drive centrally arranged inside the inner cylinder that is introduced into the hollow lifting rod.

17. (Currently Amended) The positioning apparatus as recited in ~~any of claims 14-16~~ claim 14, wherein the fluid-holding compartment is bounded at the top by a top end face of the outer cylinder and at the bottom by the piston.

18. (Currently Amended) The positioning apparatus as recited in ~~any of claims 14-17~~ claim 14, wherein the pressure regulation device comprises a pressure regulator to maintain a

constant pressure in the fluid line leading to the fluid-holding compartment, and in the fluid line a 3/2-way valve and a one-way restrictor are provided and are connected in parallel with one another.

19. (New) The positioning apparatus as recited in claim 15, wherein the lifting device comprises a hollow lifting rod that can be adjusted in height via a threaded drive mechanism, the threaded drive mechanism having a threaded drive centrally arranged inside the inner cylinder that is introduced into the hollow lifting rod.

20. (New) The positioning apparatus as recited in claim 15, wherein the fluid-holding compartment is bounded at the top by a top end face of the outer cylinder and at the bottom by the piston.

21. (New) The positioning apparatus as recited in claim 16, wherein the fluid-holding compartment is bounded at the top by a top end face of the outer cylinder and at the bottom by the piston.

22. (New) The positioning apparatus as recited in claim 15, wherein the pressure regulation device comprises a pressure regulator to maintain a constant pressure in the fluid line leading to the fluid-holding compartment, and in the fluid line a 3/2-way valve and a one-way restrictor are provided and are connected in parallel with one another.

23. (New) The positioning apparatus as recited in claim 16, wherein the pressure regulation device comprises a pressure regulator to maintain a constant pressure in the fluid line leading to the fluid-holding compartment, and in the fluid line a 3/2-way valve and a one-way restrictor are provided and are connected in parallel with one another.

24. (New) The positioning apparatus as recited in claim 17, wherein the pressure regulation device comprises a pressure regulator to maintain a constant pressure in the fluid line leading to the fluid-holding compartment, and in the fluid line a 3/2-way valve and a one-way restrictor are provided and are connected in parallel with one another.